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A new record of Sphingidae species from China (Lepidoptera, Sphingidae)

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Abstract: *Eurypteryx geoffreyi* Cadiou & Kitching, 1990, one of the rarest species in subfamily Macroglossinae, genus *Eurypteryx* C. Felder & R. Felder, 1874 in the world, only recorded from Central Vietnam, Central and North Thailand. In this study, we record it from Hainan Island, China for the first time, discuss its distribution and compare it with its similar species in China, and provide a brief description, habitat information and a distribution map of *shelfordi*-group in genus *Eurypteryx*.

Keywords: Hainan Province, new record, Sphingidae, taxonomy

中国天蛾科一新记录种及其讨论（鳞翅目：天蛾科）

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摘要：本文报道产于海南省的中国天蛾科一新纪录种——长喙天蛾亚科 Macroglossinae 的暹罗赭尾天蛾 *Eurypteryx geoffreyi* Cadiou & Kitching, 1990。该种是赭尾天蛾属中最罕见的种类之一，此前仅报道分布于越南中部以及泰国中部和北部地区。本文对其分布和在中国的近似种类进行了讨论，并附简要描述、分类特征图与生境图，以及其所属的谢氏赭尾天蛾种团的物种分布图。

关键词：海南省，新纪录，天蛾科，分类学

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Introduction

Eurypteryx geoffreyi Cadiou & Kitching, 1990 is one of the rarest species belongs to *shelfordi*-group in the genus *Eurypteryx* C. Felder & R. Felder, 1874, only recorded from Central and North Thailand as well as Central Vietnam. In this paper, we collected a female from Mt. Wuzhishan from Hainan Island, China in April of 2026, which shares a similar biogeographic biota with northern and central Vietnam. This new record of *Eurypteryx geoffreyi* not only highlights the high biodiversity of Hainan Province but also extends the possible northernmost range limit of this rare species. It further suggests that the biodiversity of hawkmoths in Hainan Province still requires more investigation in the future.

Material and methods

Voucher specimens examined in this study are deposited in the following collections:

JZHC: private collection of Zhuo-Heng Jiang, Kunming, China.

Habitus images were taken using a Canon 7D camera in conjunction with a Canon MP-E 65mm f/2.8 1-5X Macro Lens, and a Canon MT-24EX Macro Twin Lite Flash as a light source. Images of the genitalia were taken using a Canon G9 camera mounted on an Olympus CX31 microscope under reflection or transmission lighting. Zerene Stacker (version 1.04) was used for image stacking. All images were edited further using Adobe Photoshop CS6. The dissected genital structures are now stored in pure glycerol in a plastic centrifuge tube placed beside the specimen in the collection.

Taxonomy

Genus *Eurypteryx* C. Felder & R. Felder, 1874 赭尾天蛾属

Eurypteryx Felder, 1874, *Reise Fregatte Novara, Bd* 2 (Abth. 2) (4): pl. 76, f. 1.

Type species: *Eurypteryx molucca* Felder, C. & Felder, R., 1874.

Eurypteryx geoffreyi Cadiou & Kitching, 1990 暹罗赭尾天蛾

Figs 1E–H, 2A

Eurypteryx geoffreyi Cadiou & Kitching, 1990, Lambillionea, 90(4): 15; **Type locality:** Khao Yai National Park, Nakhon Nayok, Thailand.

Material examined. CHINA: ♀, Mt. Wuzhishan (692m), Hainan, 1-IV-2026, Xuan-Xuan He *leg.* [JZHC].

Diagnosis: Female (Figs 1G–H, 2A): Head, thorax—olive, sparsely covered with purple-brown hairs. Abdomen—olive, with penicillus at tip. Forewing—long, triangular with sharp apex, outer margin smooth, distal part of inner margin heavily concave; upperside ground colour olive with scattered brown scales, two creamy round spots near cell, deep gray crescent-shaped patch from apex to submarginal area; underside color paler, pattern similar to upperside but spots near cell yellowish. Hindwing—upperside deep brown, anal area covered with dense brown hairs; underside color paler, tine yellow spot near cell.

Distribution: Currently known from Hainan Island of China, Central and North Thailand, Central Vietnam.

Biological notes: Male adult usually visit flowers around dusk while female adult was collected from low elevation deciduous subtropical forest (Fig. 2B), attracted to light trap in the nighttime.

FIGURE 1. Habitus of female *Eurypteryx geoffreyi* Cadiou & Kitching, 1990 from Mt. Wuzhishan, Hainan, China: **A** upperside **B** underside. Scale bar = 10 mm.

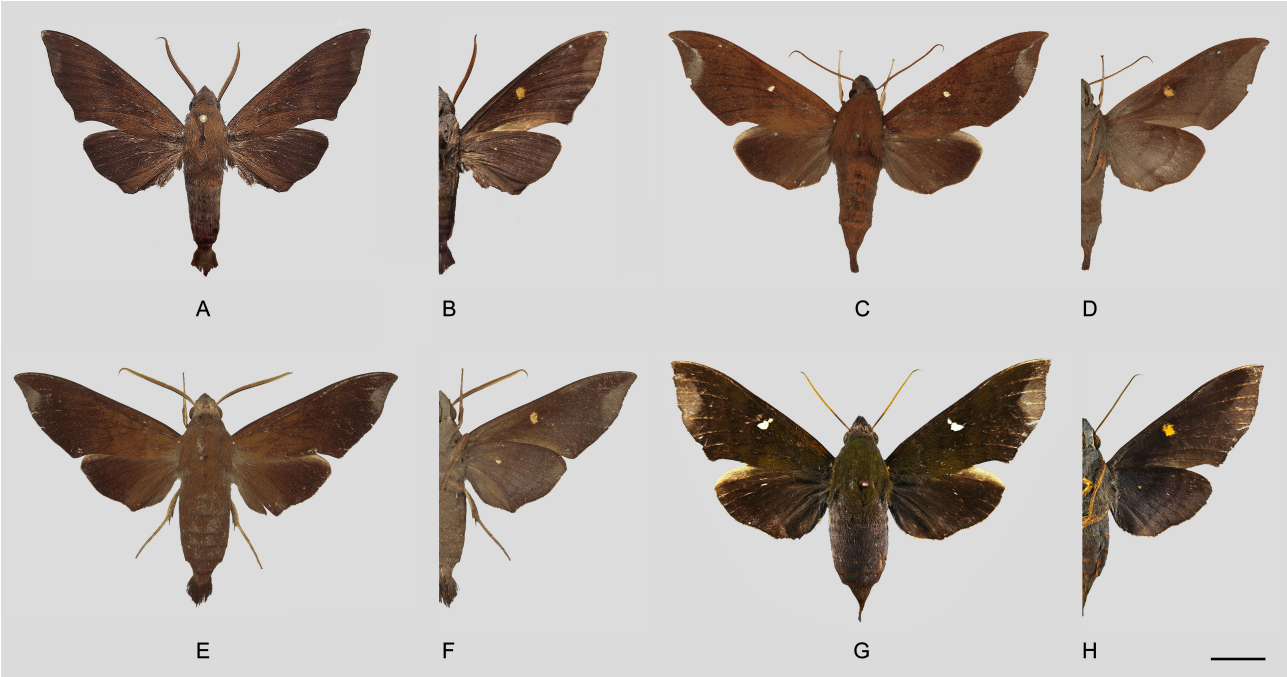

FIGURE 2. Habitus of *shelfordi*-group from China: **A–B** male *Eurypteryx dianae* Brechlin, 2006 from Libo, Guizhou, China **C–D** HOLOTYPE, female *Eurypteryx dianae* Brechlin, 2006 from Jinxiu, Guangxi, China © Ronald Brechlin **E–F** HOLOTYPE, male *Eurypteryx geoffreyi* Cadiou & Kitching, 1990 from Nakhon Nayok, Thailand © The Trustees of the Natural History Museum, London, UK (downloaded from Kitching, I.J. Sphingidae Taxonomic Inventory. http://sphingidae.myspecies.info/, accessed on 23 April 2026 **G–H** female *Eurypteryx geoffreyi* Cadiou & Kitching, 1990 from Mt. Wuzhishan, Hainan, China. Scale bar = 10 mm.

FIGURE 3. A Female adult of *Eurypteryx geoffreyi* Cadiou & Kitching, 1990 **B** Habitat in Mt. Wuzhishan, Hainan, China.

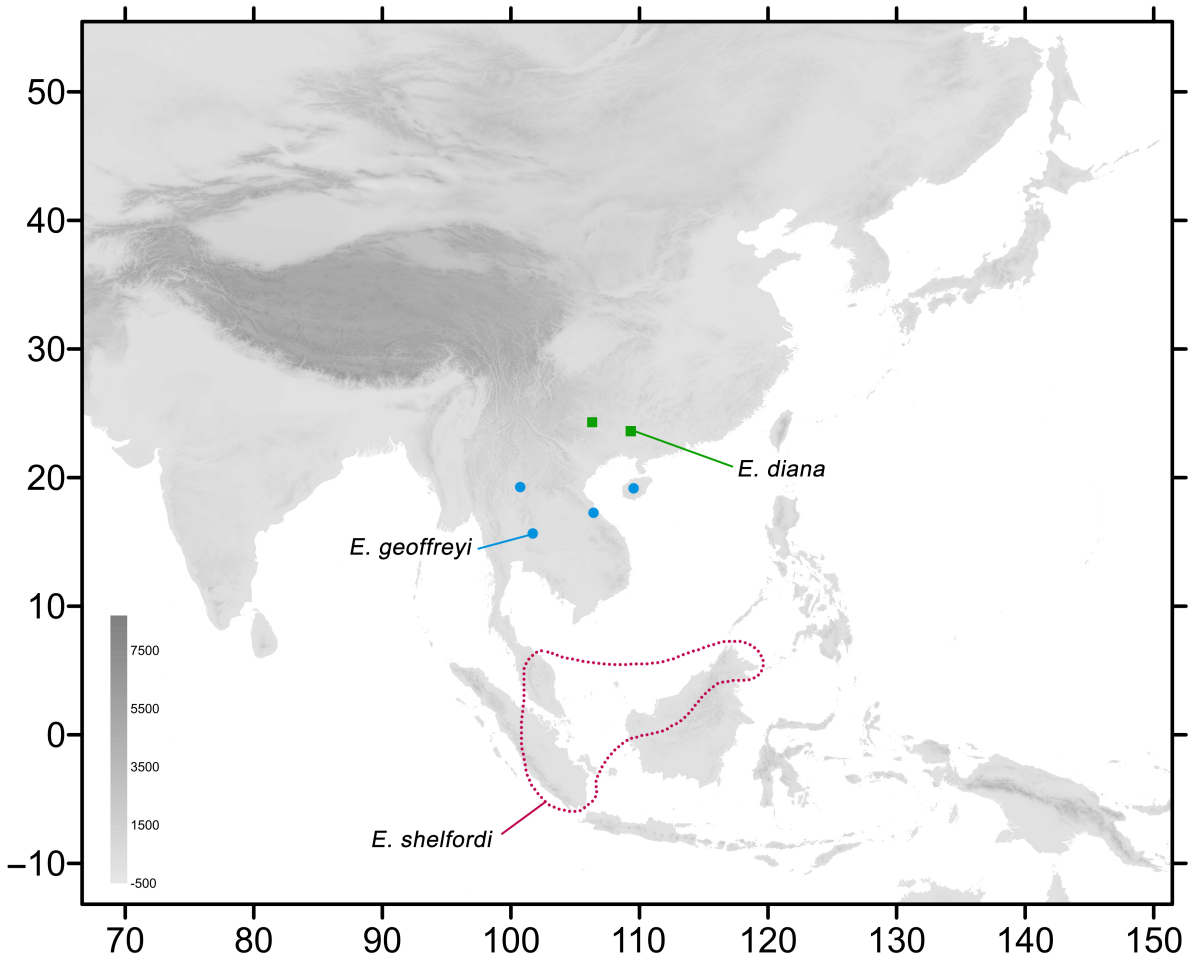

FIGURE 4. Distribution of *shelfordi*-group species in genus *Eurypteryx*.

Discussion

The genus *Eurypteryx* C. Felder & R. Felder, 1874 is a small genus limited to the Oriental and Australian regions, currently comprised of nine species, some of which are known from only a very few specimens, such as *E. geoffreyi* Cadiou & Kitching, 1990*, E. diana* Brechlin, 2006 and *E. shelfordi* Rothschild & Jordan, 1903, they belong to the *shelfordi*-group in the genus *Eurypteryx. E. geoffreyi* is a typical subtropical species habitat moth which ranged in Central Vietnam, Central and North Thailand. The newly discovery of the *E. geoffreyi* in this study from Hainan Province not only adds a valuable record to the diversity of Sphingidae in China, but also indicate the northernmost limit of this rare species, of which very few specimens have been known since its description. Hainan Island shares a similar biogeographical composition with North Vietnam, Central Vietnam, and North Thailand, therefore, the discovery of *E. geoffreyi* from Hainan is reasonable. Another Chinese species in the *shelfordi*-group, *E. dianae*, is also one of the rarest species, only two specimens were available during our study: a male from Libo, Guizhou, China and a female (holotype) from Jinxiu, Guangxi, China. We speculate its distribution range may cover a broader area, but further survey is also needed to eventually elucidate its actual range.

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Additional information

Author contributions: Conceptualization: Z-H Jiang. Methodology: Z-H Jiang. Resources: X-X He. Data curation: X-X He. Visualization: Z-H Jiang. Writing: Z-H Jiang. All authors have read and agreed to the published version of the manuscript.

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Painting Gallery

A male 高山麝凤蝶 *Byasa mukoyamai* (Papilionidae) is absorbing water from mud
illustrated by Zhuo-Heng JIANG [蒋卓衡] (Kunming, China)